

A NEW SPECIES OF THE NEW CALEDONIAN GENUS *SPHODROSOMUS*
PERROUD (COLEOPTERA: CARABIDAE: PTEROSTICHINI)

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Sphodrosomus monteithi sp. nov. is described with its type locality Mt Panié refuge, New Caledonia. A key to adults of *Sphodrosomus* and additional descriptive and locality information for the only other species in the genus, *S. saisseti* Perroud & Montrouzier, are provided. □ *New species, Sphodrosomus, flightless beetle.*

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The preinictive New Caledonian genus *Sphodrosomus* was described by Perroud (in Perroud & Montrouzier (1864: 58). There has been no recent explicit classification of *Sphodrosomus* but it is generally placed in catalogues near other New Caledonian, New Zealand and Australian genera of Pterostichini (Csiki, 1929, 1930; Lorenz, 2005a, b). Tschitschérine (1901) did consider their quadrisetose ligula and elongate appendages distinct enough to designate a tribal-level taxon Sphodrosomini, however, most authors place the genus within a broad concept of Pterostichini. The habitus of *Sphodrosomus* species is similar to members of *Psegnatopterus* Chaudoir, *Platysmodes* Fauvel and *Notonomus* Chaudoir. DNA sequence data (28s rDNA, K. Will & D. Maddison unpubl.) suggests that these taxa and other genera in Moore's (1965) *Notonomus* series may form a monophyletic group. Recent fieldwork by the Queensland Museum in New Caledonia revealed a second species of *Sphodrosomus* that is described below.

METHODS

Dissection methods for male and female genitalia and defensive glands, measurements and descriptive terms follow Will (2002). Images were taken using a Microptics XLT digital imaging system.

ABBREVIATIONS. QM, Queensland Museum, Brisbane; MNHN, Muséum National d'Histoire Naturelle, Paris; BMNH, Natural History Museum, London; EMEC, Essig Museum of Entomology Collection, University of California, Berkeley, CA.; NMW, Naturhistorisches Museum, Vienna.

TAXONOMY

Sphodrosomus Perroud Perroud & Montrouzier (1864: 58).

TYPE SPECIES. *Sphodrosomus saisseti* Perroud (in Perroud & Montrouzier (1864: 59) by monotypy.

NOMENCLATURE. In the original description Perroud & Montrouzier (1864) intended to honor Governor Saisset of New Caledonia with a patronym. However, they spelt the specific epithet 'saisseti' and in the dedication referred to 'Son Excellence le gouverneur Saisset'. The spelling of the specific epithet was changed by Fauvel (1882: 273) to 'saisseti' without explanation. Fauvel's change, however, is not an emendation according to the criteria set by article 33.2.1 of the code (ICZN 1999). The ICZN is clear that prevailing usage should then determine the correct spelling (article 33.3.1). In this case all subsequent authors have used 'saisseti'. Additionally, there has been variation in the attribution of the genus to either Perroud & Montrouzier (and variation in the spelling of Montrouzier as Montrousier) or only Perroud. As discussed by Perroud in the opening letter to their paper, the specimens were sent to Perroud by Montrouzier with notes and tentative identifications. Perroud did not follow Montrouzier's generic placements and described new genera without any obvious input from Montrouzier. In the present case Perroud noted that the name given by Montrouzier was '*Pamborus saisseti*'. Therefore the attribution of *Sphodrosomus* is considered to be Perroud in Perroud & Montrouzier (1864).

GENERIC DIAGNOSIS. Distinguished from other austral pterostichines by the ovate form of the

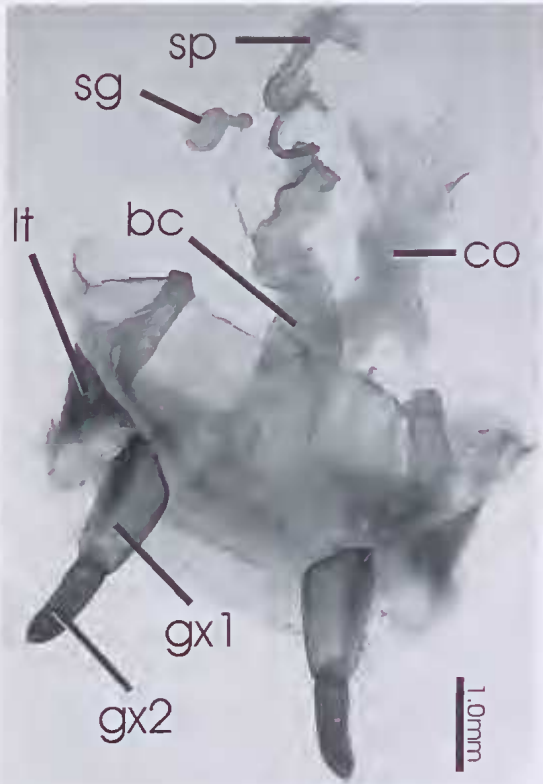


FIG. 3. Female reproductive tract of *Sphodrosomus monteithi*, ventral view. bc, bursa copulatrix; co, common oviduct; gx1, gonocoxite-1; gx2, gonocoxite-2; lt, laterotergite IX; sg, spermathecal gland; sp, spermatheca.

of setae in male and two pairs in female. Aedeagus (Fig. 2) with dorsal ostium; parameres dissimilar, left larger, somewhat acuminate, right very narrow. Female tract (Fig. 3) with elongate bursa with spermatheca at apex and appended gland at base of spermatheca. Latero-tergite IX with thick, membranous, plurisetose apex. Gonocoxite-1 with 10-12 lateral setae in apical third, gonocoxite-2 glabrous except for 2 minute setae in apical furrow. Pygidial gland (Fig. 4) reservoir relatively large with large dorsal lobe that is narrowly connected and clearly distinct from main reservoir, efferent duct medially expanded, collecting canal insertion near base of efferent duct.

KEY TO ADULTS OF *SPHODROSOMUS*

1. Anterior face of profemur with one medial and one basal seta; elytral dorsal surface scarcely papillose, relatively smooth in dorso-media third
..... *Sphodrosomus monteithi* sp. nov.
Anterior face of profemur with more than two setae, in

most individuals arranged as a longitudinal row of 4-10 setae and cluster of 2-4 basal setae; elytral dorsal surface clearly and uniformly papillose throughout
..... *Sphodrosomus saisseti* Perroud & Montrouzier

Sphodrosomus monteithi sp. nov.

(Figs 1A-B, 2A-D, 3, 5)

ETYMOLOGY. Noun in the genitive case. This honours the collector Geoff Monteith, Queensland Museum, for his continuing contributions to entomology as an excellent collector and his generous assistance to entomologists.

MATERIAL. HOLOTYPE, ♂: New Caledonia, 20°34'S x 164°46'E, Mt Panié refuge, 1300m, 16-18 Nov 2000. Bouchard Burwell & Monteith, 9938 (MNHN). ALLOTYPE, ♀: New Caledonia, 9940, 20°34'S x 164°46'E, Mt Panié refuge, 1300m 16-18 Nov 2000. G. Monteith, Dung pitfalls, (QM T133291). PARATYPES, New Caledonia: 3♂, 2♀, Mt Panié, 1300m, 3 Nov 1988, R. Raven (1♂ BMNH, 1♂, 1♀ EMEC, 1♂, 1♀ QM); 9♂,

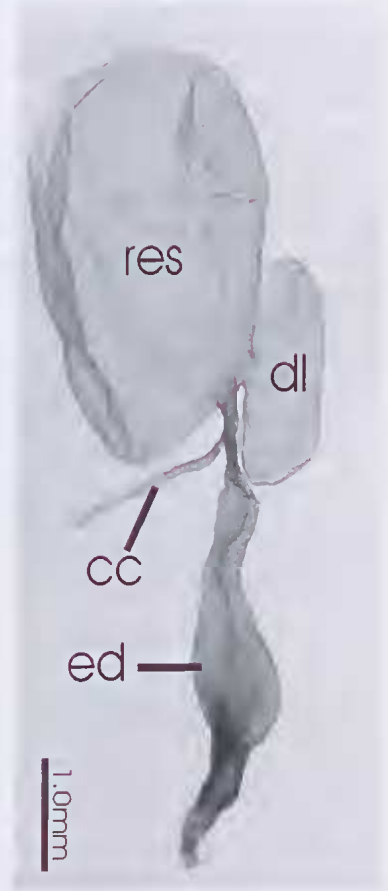


FIG. 4. Cuticular portion of a single pygidial gland of *Sphodrosomus saisseti*, right gland in left lateral view. res, reservoir. dl, dorsal lobe. cc, collecting canal. ed, efferent duct.



FIG. 5. Distribution of *Sphodrosomus* species. ⊗, *S. monteithi*. ★, *S. saisseti*.

8♀, Mt Panié, 1300m, 4-7 Dec 1990, R.J. Raven pitfalls, (9♂, 7♀ QM, 1♀ EMEC); 3♀, same data as allotype (QM); 1♂, 1♀, Mt Panié, 20°35'Sx164°45'E, 1300m, *Agathis montana* rainforest, R. J. Raven, 4-14 Dec 1990, pitfall traps (QM).

DESCRIPTION. Total length of holotype 24.5mm, greatest width 8.5mm. Colour black to rufopiceus, dorsally darker than ventral surface and legs. General body-form (Fig. 1A,B) elongate oval and acuminate to elytral apex. Suture between mentum and submentum notably sinuate. Glossal selerite with three setae on right side and one seta on left in holotype. Elytra with intervals 1-4 notably flatter than 5-8, interval 5 slightly elevated and 7 subearinate near base. Interval 9 with nearly continuous row of 30-33 small, umbilicate punctures, six to seven umbilicate punctures in interval 8 near apex. Elytral intervals slightly papillose to nearly smooth, smoother in basal third. Prominent isodiametric microseulture in striae. Mesotrochanter without setae. Profemur with anterior 0-1 setae, dorsal 2-8 setae in irregular

row, posterior 1 basal and 1 medio-ventral seta. Mesofemur with no anterior setae, dorsal 14-18 setae in irregular row, posterior medial row of 6-9 setae from base distally. Protibiae with two ventral rows of stout setae and apical row of setae ended beyond single notably stouter and longer seta, two elip setae in antennal cleaner groove. Meso- and metatibiae with four longitudinal rows of setae each, median row notably denser and with finer setae. All tarsi dorsally glabrous, with two rows of setae on ventral surface. Claws simple with single setae subtending each claw. Median lobe of aedeagus (Fig. 2A, B) with apex broadly rounded with slight bend in tip beyond ostium, tip short.

VARIATION. Range of lengths among type series 21-26.5mm, width 7.5-9.0mm. The number and distribution of setae on the glossal selerite varies as follows with *number of individuals/ [left side][right side]*: 14/[2][2]; 6/[1][2]; 2/[3][2]; 2/[1][1]; 2/[2][3]; 1/[1][3]; 1/[2][1].

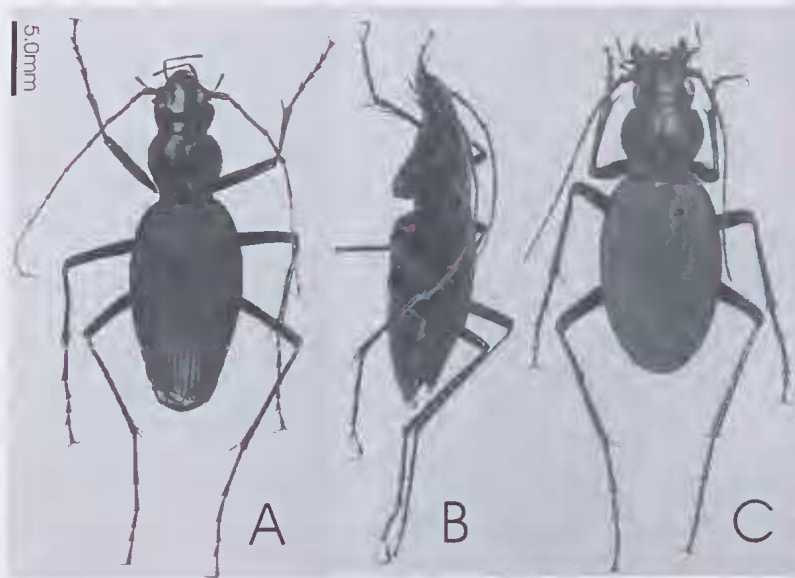


FIG. 1. Habitus images. A, dorsal and B, left lateral views of *Sphodrosomus monteithi* new species. C, dorsal view of *S. saisseti*.

elytra, the extremely long palps, long gracile legs, relatively large head (Fig. 1) and a glossal sclerite that, in most individuals, has two pairs of apico-ventral setae rather than the more common condition of one pair. Specimens run to *Notonomus* in Moore's (1965) key to pterostichine genera of Australia and New Zealand but can be separated from members of that taxon by the lack of the dorsal setigerous puncture on the third elytral interval and, in most individuals, by the presence of two pairs of apico-ventral setae or at least two or more setae on one side of the midline of the glossal sclerite.

Additional descriptive notes for genus on aspects not covered by Perroud & Montrouzier (1864). Head with slight constriction behind eyes, two pairs of supra-orbital setae, clypeus with one pair of setae set medially from margin by 3 times width of setal pore, labrum with three pairs of setae, fronto-clypeal suture indistinct. Frontal foveae broad shallow, ending just anterad of anterior supra-orbital seta. Eyes not prominent, longest axis across eye twice width of sub-ocular gena. Suture between mentum and submentum distinct. Submentum with one pair of setae. Glossal sclerite in most specimens with two pairs of apico-ventral setae. Penultimate labial palpomere with one pair of setae. Maxillary stipes and palpifer with one seta each. Antennomeres 5-11 with thin, lateral, longitudinal carina. Pronotum with two

pairs of lateral setae, base without marginal bead. Elytra with parascutellar striae and stria-1 continuous to base. Elytral interval 9, epipleura and narrow region across apex of elytra shiny and usually starkly contrasting with remaining, rather dull elytral surface. Elytra without basal and dorsal setiferous pores. Elytral plica present. Apical edge of elytra with deflexed edge. Protarsi of males and females not dilated and lacking squamose setae ventrally. Last abdominal ventrite with one pair

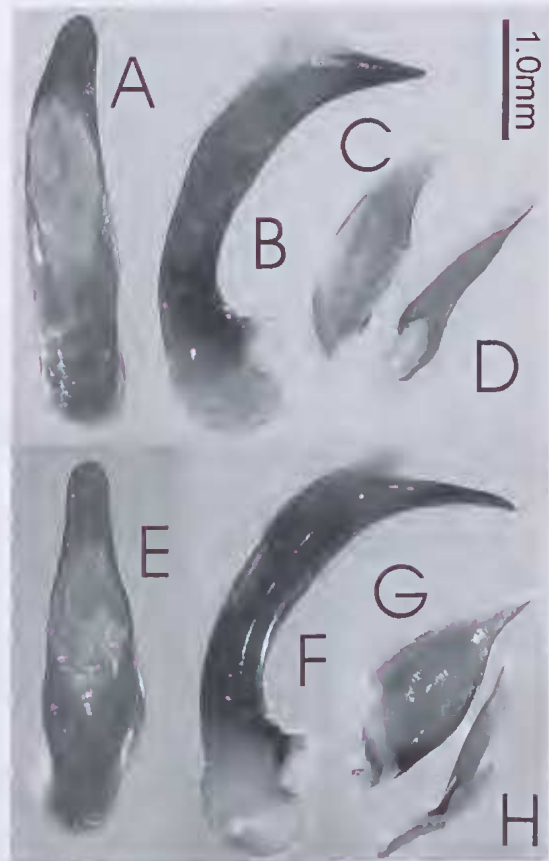


FIG. 2. Aedeagus of *Sphodrosomus monteithi* new species (A-D) and *S. saisseti* (E-H), median lobe in A, E dorsal and B, F left lateral views; C, G left paramere; D, H right paramere.

Sphodrosomus saisseti Peroud & Montrouzier
(Figs 1C, 2E-H, 4)

DESCRIPTIVE NOTES IN ADDITION TO GENERIC DESCRIPTION. General body-form (Fig. 1C) elongate oval. Suture between mentum and submentum scarcely sinuate. Glossal sclerite with two pairs of setae on each side of midline ($n=3$). Elytra with intervals 3, 5 and 7 notably more convex and 7 subearinate near base. Elytral intervals clearly papillose throughout. Profemur with longitudinal row of 4-10 setae and cluster of 2-4 basal setae. Median lobe of aedeagus (Fig. 2E, F) with apex broadly rounded with tip beyond ostium straight, long and thin.

LOCALITY RECORDS. (Fig. 5) The type locality for *Sphodrosomus saisseti* is Canala. New collection records for this species are 21°35'S 165°51'E, Mt Rembai, top junction, 800m, 19-30 Dec 2004, rainforest, G.Monteith, dung pitfall (1♀ QM); and 21°45'S 166°09'E, Ningua Reserve Camp, 1100m, 27 Nov 2001- 29 Jan 2002, rainforest, G.Monteith, pitfall (1♂ QM; 1♀ EMEC). Neukaledonien: Col Boa Foret de Niaouli 11.8.1965 Österr. neukaeldonien-Exped. (2♀ NMW: M. Baehr, pers. comm.)

DISTRIBUTION AND COLLECTING INFORMATION. Both species of *Sphodrosomus* have been collected in high precipitation, rainforest above 800m elevation. *Sphodrosomus monteithi* has not been collected below 1300m and specimens of *S. saisseti* that include elevational data range from 800m (Rembai) to 1100m (Ningua). The type locality of *S. saisseti*, "Kanala", most likely refers to Mt Canala (southwest of the town of Canala), which rises to 1050m. The new locality records for *S. saisseti* are within 30km of Canala, while the distribution of *S. monteithi* is separated by approximately 220km. Intensive collecting on most of the high mountain massifs on the island by members of the Queensland Museum in recent years, often using methods known to collect *Sphodrosomus*, suggest that the specimens so far collected are likely to represent the actual circumscribed distribution of the species. Based on limited observations of live *S. monteithi*, they have a fast moving gait and were found walking on wet nights, sometimes during heavy rain (G. Monteith, pers. comm.).

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